Claims:

1. A method of controlling a multi-combustor catalytic combustion system comprising the acts of:

determining a temperature downstream of a preburner associated with a catalytic combustor in a multi-combustor system; and

adjusting the fuel flow to the preburner based on the temperature.

2. The method of claim 1, wherein the preburner includes a flame burner.

3. The method of claim 1, wherein the preburner includes two or more fuel stages.

4. The method of claim 3, wherein fuel flow to the two or more fuel stages is determined based upon a fixed fuel split schedule during an ignition sequence.

5. The method of claim 1, wherein the preburner includes one or more fuel orifices that are sized proportional to the airflow of the combustor.

6. The method of claim 1, wherein one or more fuel orifices supplying fuel to a catalyst of the catalytic combustor are sized proportional to the airflow of the combustor.

7. The method of claim 1, wherein the system includes at least a second preburner associated with at least a second catalytic combustor, and the fuel flow to each preburner is proportional to the airflow through each combustor.

8. The method of claim 7, wherein closed loop control on a single preburner is used to determine fuel flow to all preburners in the multi-combustor system.

9. The method of claim 1, wherein the act of adjusting the fuel flow to the preburner includes closed loop control on the preburner outlet temperature.

10. The method claim 1, wherein the act of adjusting the fuel flow to the preburner includes closed loop control on a catalyst inlet temperature.

11. The method of claim 1, wherein the act of adjusting the fuel flow to the preburner includes closed loop control on a catalyst outlet temperature.

12. The method claim 1, wherein the system includes at least a second preburner associated with at least a second combustor, and the act of adjusting the fuel flow to the preburner compensates for combustor-to-combustor variations.

13. The method of claim 12, wherein the combustor-to-combustor variations include a variation in at least one of preburner ignition delay, catalyst light-off temperature, and a position of homogeneous combustion in a burnout zone.

14. The method of claim 13, wherein the fuel flow is adjusted to vary the position of a homogeneous combustion wave in the burnout zone.

15. The method of claim 14, wherein the position of the homogeneous combustion wave in the burnout zone is determined by dual UV sensors disposed in the burnout zone.

16. The method claim 1, further including the act of adjusting an airflow through at least one of the preburner and the combustor.

17. The method of claim 16, wherein the act of adjusting the airflow through at least one of the preburner and the combustor includes adjusting dilution holes in the preburner.

18. The method of claim 16, wherein the act of adjusting the airflow through at least one of the preburner and the combustor includes varying at least one of a bypass valve and a bleed valve associated with the combustor.

19. The method of claim 16, wherein closed loop fuel control the preburner is used to determine fuel flow to at least a second preburner associated with at least a second combustor.

20. A multi-combustor catalytic combustion system including:

a plurality of preburners, wherein each of the plurality of preburners is associated with a combustor and includes:

at least two fuel stages; and

at least one fuel manifold coupled to each of the at least two fuel stages, wherein an orifice of the at least one fuel manifold is sized proportional to an airflow through the combustor.

21. The system of claim 20, wherein each preburner includes only one fuel valve for each fuel stage.

22. The system of claim 20, wherein fuel flow to the at least two fuel stages is controlled by feedback based on a measurement of temperature downstream of the preburner outlet.

23. The system of claim 20, wherein fuel flow to the at least two fuel stages for the plurality of combustors is controlled by feedback from one preburner based on a measurement of temperature downstream of the one preburner outlet.

24. A multi-combustor catalytic combustion system including:

a plurality of preburners, wherein each preburner is associated with a combustor and includes:

an air inlet that is selectively opened for each preburner to match airflow through the combustor to fuel flow to the combustor.

25. The system of claim 24, wherein the air inlet includes at least one of a plurality of dilution holes, an orifice that may be constricted, and vanes to divert airflow.

26. The system of claim 24, wherein the preburners are controlled by feedback from one preburner based on a measurement of temperature downstream of the one preburner outlet.

27. A method of controlling a multi-combustor catalytic combustion system comprising the acts of:

varying at least one of a fuel flow and an airflow to a plurality of combustors; and

controlling the location of a homogeneous combustion wave in each of the plurality of catalytic combustors.

28. The method of claim 27, wherein the fuel flow or the airflow is varied based upon feedback from an ignition delay calculation.

29. The method of claim 27, wherein the fuel flow is varied based upon feedback from at least one of a measure of a catalyst inlet gas temperature, catalyst exit gas temperature, and combustor airflow.

30. The method of claim 27, wherein the airflow is varied based upon feedback from at least one of a measure of a catalyst inlet gas temperature, catalyst exit gas temperature, and combustor fuel flow.

31. The method of claim 30, wherein the airflow to each combustor is varied by a bypass valve.

32. The method of claim 30, wherein the airflow to each combustor is varied by a bleed valve.

33. The method of claim 27, wherein at least one of the fuel flow and the airflow is varied based upon feedback from two UV sensors placed in the burnout zone of at least one combustor.

34. The method of claim 33, wherein at least one of the fuel flow and the airflow is varied based upon feedback from two sets of two UV sensors placed in the burnout zone of two combustors.

35. The method of claim 34, wherein the two combustors include a minimum mass flow combustor and a maximum mass flow combustor of the plurality of combustors.

36. The method of claim 27, wherein at least one of the fuel flow and the airflow is varied based upon feedback from a measure of the relative uniformity of the exhaust gas temperature.

37. The method of claim 27, wherein at least one of a fuel flow and an airflow to the preburner is varied.

38. The method of claim 27, wherein at least one of a fuel flow and an airflow to the catalyst is varied.

39. A method of controlling a multi-combustor catalytic combustion system comprising the acts of:

determining a first characteristic of operation for at least one combustor in a multi-combustor system;

determining a second characteristic of operation for the multi-combustor system; and

controlling the system based upon feedback from the first characteristic and the second characteristic.

40. The method of claim 39, wherein the first characteristic includes a measure of a catalyst exit temperature.

41. The method of claim 39, wherein the first characteristic includes the position of a homogenous combustion wave.

42. The method of claim 39, wherein the second characteristic includes a measure of CO emissions.

43. The method of claim 39, wherein the second characteristic includes a measure of CO emissions from all combustors in the multi-combustor system.